HISTORY

- CC: Post-op low pressures
- HPI: 65 y.o, M, low IOPs post trabeculectomy-R
  - 3 weeks ago underwent fornix based trabeculectomy w/ MMC - R eye
  - No report of complications during the surgery
  - Patient denied any eye pain or discomfort

- Hx of POAG x 10yrs
  - R eye: On triple therapy w/ Xalatan, Timolol, and Alphagan-IOPs 25
  - L eye: IOP controlled at 10mmHg with Xalatan
• POHx: POAG x 10years
• PMHx: HTN, Reflux
• FH: Mother w/ glc
• SH: negative
• ROS: negative
• Meds: Lisinopril, Nexium
• Allergies: NKDA
Exam

- **DVAcc**: 20/200 (preOp 20/20)
  - 20/20

- **Pupils**: 4-->2
  - No APD

- **IOP**: 1mmHg
  - 10mmHg

- **VF: FTFC**

- **EOM: Full**
External Exam

- L/L: WNL b/L

- Conj/Sclera:
  - R: 1+ injection, w/ diffuse bleb, 180° sup, Seidel negative
  - L: clear

- A/C:
  - R-shallow AC, 1+ cell/flare
  - L-D&Q

- Cornea:
  - R-trace edema
  - L-clear

- Lens: NSC 1+ b/L
- Decreased VA
  - Vitreous Hemorrhage
  - Choroidal Hemorrhage
  - Cystoid Macular Edema, CSR
  - AION

- Decreased IOPs
  - Wound Leak
  - Bleb over-filtration
  - Aq. Hyposcretion
  - Cyclodialysis Cleft

Hypotony Maculopathy
Choroidal Detachment/Effusions
Retinal Detachment
Persistent Uveitis
Bleb Over-filtration

- Often see large filtering bleb
- Excess flow thru scleral flap
- Antimetabolites appear to increase risk

Bleb Leakage

- More often seen with fornix based flaps
- Can occur late or early
- Early: related to wound closure
- Late: antimetabolites/trauma/spont thinning

Serous Choroidal Detachment

- Fluid collects in suprachoroidal space in hypotonous eyes
- Leads to fluid flow from choroidal capillaries
- Prolongs hypotony:
  ▲ Uveoscleral flow
  ▼ Aq production
Hypotony Maculopathy

• Hypotony typically defined as IOP<5

• Complication of glaucoma filtering surgery, other anterior segment surgery, or trauma

• Increased incidence with younger age, male gender, myopia, and use of anti-fibrotics
Wound/Bleb leak

Over-filtration thru Sclerotomy site

Cyclodialysis cleft

Aq. Hyposecretion (Ciliary body toxicity)

HYPOTONY  MACULOPATHY
• Anterior Segment
  – Shallow A/C-Iris cornea touch
  – AC reaction
  – Ant/Post synechiae
  – Corneal Edema
  – Cataract

• Posterior Segment
  – Optic nerve head swelling
  – Retinal folds
  – Macular edema
  – Choroidal folds
  – Choroidal Effusions
Diagnosis:
- Fundus exam --> Retinal folds
- FA --> Choroidal folds
- OCT --> Retinal and choriocapillary folds
- B-scan --> Choroidal effusions
- UBM --> Cyclodialysis cleft
• Prognosis:
  – Worse with increased duration of hypotony (controversial – there are cases of significant visual improvement even after years of hypotony)

• Treatment: Manage underlying cause
  – Wound/Bleb leak:
    • Possibly aqueous suppressants
    • Tamponade effect bandage contact lens
    • Surgical correction - suturing, revision of bleb
  – Over filtering Bleb:
    • Pressure patch, deepen AC with viscoelastic material
    • Autologous blood injection
    • Laser base of bleb
    • Fibrin glue-seal scleral flap
  – Cyclo dialysis:
    • Cycloplegics
    • Close cleft
Overfiltering bleb

- Application of Nd:YAG laser to base of bleb
  Kahook et al. Journal of Cataract and Refractive surgery. 2006
  Case report: Over-filtering bleb-->Hypotony maculopathy
    - Postop IOP: 4mm Hg, Post-op VA: 20/400
    - Two rounds w/ Nd:YAG green laser over trypan blue painted bleb (300ms, 1000mW, size 100 to 300um, 40 to 50 shots)
    - Post laser IOP: 9mm Hg, Post laser VA: 20/25

- Fibrin glue for temporary seal of scleral flap
  Case Report: Over-filtering bleb→ hypotony w/ choroidal detachments
    - Temporary seal of scleral flap-subconj applic of fibrin glue
    - Resolution of choroidal detachment, with nl IOP, functional bleb
Back to our patient

- Treated over-filtering bleb with fibrin glue placed under the conjunctiva
- Had patient stop topical steroids to promote wound healing
- Post IOP: 9mmHg
- Post VA: 20/25, with resolution of retinal and choroidal folds
References